Appl. No. 09/252,690
Amdt. Dated February 12, 2004
Reply to Office Action of August 12, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Amended) An XY address type solid state image pickup device comprising a plurality of pixels each having a photoelectric conversion unit producing a signal from incident light arranged in rows and columns, a horizontal scanning circuit and a vertical scanning circuit, wherein a reading operation for a signal of a pixel in one row and an electronic shutter operation for a signal of a pixel in another row are carried out ~~during one pixel period and further~~ wherein the solid state image pickup device has a plurality of signal lines, each of said signal lines being associated with corresponding pixels and each of said signal lines is used for both said reading operation and said shutter operation and wherein a single signal output line is used for transferring both image output signals and output from the shutter operation for a pixel.

2.   (Previously Amended) A solid state image pickup device according to claim 1, characterized in that a reading operation of a signal of a pixel in one column in the one row and an electronic shutter operation for a signal of a pixel in the one column in the other row are performed during a same time period.

3.   (Previously Amended) A solid state image pickup device according to claim 1, characterized in that a reading operation of a signal of a pixel in one column in the one row and an electronic shutter operation for a signal of a pixel in a column adjacent to the one column in the other row are performed during a same time period.

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4.   (Previously Amended) A solid state image pickup device according to claim 1, characterize in that a read scanning pulse and an electronic shutter scanning pulse are respectively supplied from said horizontal scanning circuit and said vertical scanning circuit.

5.   (Previously Amended) A solid state image pickup device according to claim 4, characterized in that one pulse is supplied for each pixel as the read scanning pulse, one pulse is supplied for each pixel as the electronic shutter scanning pulse, and one of the read scanning pulse and the electronic shutter scanning pulse is supplied at a timing such that phases of the read scanning pulse and the electronic shutter scanning pulse do not overlap.

6.   (Previously Amended) A solid state image pickup device according to claim 1, wherein a vertical selection switch for reading a signal charge, from the pixel in the photoelectric conversion unit, to a signal line is controlled by a product between a vertical scanning pulse and a horizontal read pulse, and further wherein a charge detection amplifier for converting the read signal charge into a voltage is connected to said signal line, and a read scanning pulse and an electronic shutter scanning pulse are respectively supplied from the horizontal scanning circuit and the vertical scanning circuit.

7.   (Previously Amended) A solid state image pickup device according to claim 6, characterized in that one pulse is supplied for each pixel as the read scanning pulse, one pulse is supplied for each pixel as the electronic shutter scanning pulse, and one of the read scanning pulse and the electronic shutter scanning pulse is supplied such that phases of the read scanning pulse and the electronic shutter scanning pulse do not overlap.

8.   (Amended) A method for driving an XY address type solid state image pickup device having an image pickup region with a plurality of pixels each having a photoelectric conversion unit producing a signal from incident light arranged in rows and columns, a horizontal scanning circuit, a vertical scanning circuit and a plurality of signal lines being associated with corresponding pixels comprising:

performing a reading operation for a signal of a pixel in one row and an electronic shutter operation for a signal of a pixel in another row ~~during one pixel period~~ and further wherein each of said signal lines is used for both said reading operation and said shutter operation <u>and wherein a single signal output line is used for transferring both image output</u> <u>signals and output from the shutter operation for a pixel</u>.

9.   (Previously Amended) A driving method for a solid state image pickup device according to claim 8, characterized in that a reading operation of a signal of a pixel in one column in the one row and an electronic shutter operation for a signal of a pixel in the one column in the other row are performed during a same period of time.

10.   (Previously Amended) A driving method for a solid state image pickup device according to claim 8, characterized in that the reading operation of a pixel in one column in the one row and an electronic shutter operation for a pixel in a column adjacent to the one column in the other row are performed during a same period of time.

11.   (Previously Amended) A driving method for a solid state image pickup device according to claim 8, characterized in that a read scanning pulse and an electronic

shutter scanning pulse are respectively supplied from the horizontal scanning circuit and the vertical scanning circuit.

12. (Previously Amended) A driving method for a solid state image pickup device according to claim 11, characterized in that one pulse is supplied for each pixel as the read scanning pulse, one pulse is supplied for each pixel as the electronic shutter scanning pulse, and one of the read scanning pulse and the electronic shutter scanning pulse is supplied such that phases of the read scanning pulse and the electronic shutter scanning pulse do not overlap.

13. (Previously Amended) A driving method for a solid state image pickup device according to claim 8, wherein a vertical selection switch for reading a signal charge obtained by the pixel in the photoelectric conversion unit to a signal line is controlled by a product of a vertical scanning pulse and a horizontal read pulse, the signal charge read to the signal line is converted into a voltage by a charge detection amplifier connected to said signal line, and a read scanning pulse and an electronic shutter scanning pulse are respectively supplied from the horizontal scanning circuit and the vertical scanning circuit.

14. (Previously Amended) A driving method for a solid state image pickup device according to claim 13, characterized in that one pulse is supplied for each pixel as the read scanning pulse, one pulse is supplied for each pixel as the electronic shutter scanning pulse, and one of the read scanning pulse and the electronic shutter scanning pulse is supplied such that phases of the read scanning pulse and the electronic shutter scanning pulse do not overlap.

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15.   (Amended) A camera, comprising an optical system for focusing incident light on an image pickup region of a solid state image pickup element, an XY address type solid state image pickup element having the image pickup region, a plurality of pixels each provided with a photoelectric conversion unit for producing a signal from the incident light arranged in rows and columns, a drive unit for driving the solid state image pickup element, and a signal processing unit for signal-processing an output signal from the solid state image pickup element to produce a video signal, wherein the drive unit has a horizontal scanning circuit and a vertical scanning circuit, and a reading operation for a signal of a pixel in one row and an electronic shutter operation for a signal of a pixel in another row are carried out ~~during one pixel period~~ by the drive unit and further wherein said solid state image pickup element has a plurality of signal lines, each of said signal lines being used for both said reading operation and said shutter operation and wherein a single signal output line is used for transferring both image output signals and output from the shutter operation for a pixel.

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